

<p align="center"><b>ARIZONA DEPARTMENT OF AGRICULTURE</b></p> <p align="center"><b>DIRECTOR'S ADMINISTRATIVE ORDER</b></p> <p align="center"><b>PLANT SERVICES DIVISION</b></p> <p align="center"><b>KARNAL BUNT</b></p>	<p><b>DIVISION/ PROGRAM</b> <u>5</u></p> <p><b>ORDER</b> <u>DAO 96-03</u></p> <p><b>SIGNATURE</b> <u>[Signature]</u></p> <p><b>DATE</b> <u>19 Apr 96</u></p>
---	--

Supersedes DAO 96-01, dated April 2, 1996

**1. PURPOSE**

To control and manage the fungal disease, Karnal bunt, *Tilletia indica* (Mitra) Mundkur.

**2. AUTHORITY**

A.R.S. § 3-209 Quarantines; notice to common carriers; duty to hold for inspection; certificate of release; inspection

**3. RESPONSIBILITY**

The director shall ensure that all employees understand and comply with this order.

**4. APPLICABILITY**

This order applies to the control and management of commodities manifesting the disease or contaminated with commodities manifesting the disease Karnal bunt within the area under quarantine.

**5. DEFINITIONS**

1. "Animal manure" is not regulated under this order.
2. "Area under quarantine" means all wheat farming acreage that manifests the disease; those fields testing positive in the 1996 pre-harvest sampling process where bunted kernels were found (26 fields). Fields will remain under quarantine for a minimum of 5 years.
3. "Covered commodity" means:
  - a. Conveyances, including trucks, railroad cars, and other containers used to move wheat, Durum wheat or Triticale from the area under quarantine;
  - b. Plants and plant parts from the area under quarantine, including grain, seed, or straw of all varieties of the following:
    - i. Wheat, *Triticum aestivum*;

- ii. Durum wheat, *Triticum durum*;
- iii. Triticale, *Triticum aestivum* X *Seale cereale*.
- c. Soil (clumps or clods – excluding dust, road film, etc.) from the area under quarantine.
- d. Used seed conditioning equipment in the State found to be infested with bunted kernels manifesting the Karnal bunt disease;
- e. Equipment in the State, including combines, which is determined through inspection to be infested with bunted kernels manifesting the Karnal bunt disease.
- f. Any other plant, article or means of conveyance when an inspector determines that it is contaminated with bunted wheat kernels manifesting the Karnal bunt disease.
- 4. “Disease” means that bunted kernels are present on the growing plant or in the wheat kernels being tested.
- 5. “Inspector” means a department employee.
- 6. “Karnal bunt” means a plant disease caused by the fungus *Tilletia indica* (Mitra) Mundkur.
- 7. “Soil” means the upper layer of earth in which plants can grow. Consists of clumps or clods. Road film, dust, or incidental soil is not covered.

## 6. ORDER

### A. Seed.

- 1. Seed for planting.
  - a. All wheat seed shall be treated with a fungicide;
  - b. Wheat seed shall be tested and found “free from” Karnal bunt spores and bunted kernels.
- 2. Seed infected with Karnal bunt.
  - a. Not to be used for propagation;
  - b. May be used for feed, milling, or other non-propagative purposes.

### B. Wheat grain manifesting the Karnal bunt disease and/or spores.

- 1. May be stored on the ground separate from non-infected wheat;
- 2. May be moved to and stored at an approved elevator site.

### C. All wheat grown in Cochise, Graham, LaPaz, Maricopa, Mohave, Pima, Pinal, and Yuma Counties and/or sold in Arizona will be tested for the presence of kernels manifesting the Karnal bunt disease



and/or spores.

D. Millfeed.

1. Millfeed produced as a result of negative or positive wheat is not required to be treated.
2. Millfeed produced as a result of positive wheat shall be treated before leaving the USDA regulated area.

E. Treatments.

1. Seed.

- a. Storage bins. Bins which have previously held bunted kernels of wheat; and
- b. Combines and seed conditioning equipment found infested with bunted kernels of wheat shall receive 1 of the following treatments before clean wheat seed can be stored or the equipment used:
  - i. Sodium hypochlorite. Wet all surfaces to the point of runoff with a solution of chlorine mixed with water applied at the rate of 1 gallon of commercial chlorine bleach (5.2 percent sodium hypochlorite) mixed with 2.5 gallons water. To minimize corrosion, the equipment or site should be thoroughly washed down after 15 minutes; or
  - ii. Steam. Apply to all surfaces to the point of runoff; or
  - iii. Hot water and detergent. Apply under high pressure (at least 30 pounds per square inch) at a minimum temperature of 180 degrees F. to all surfaces; or
  - iv. Fumigation. Methyl bromide at 15 pounds/1000 cu. feet for 96 hours. For use when the treatments in subsection (E)(1)(b)(i), (ii), and (iii) are not practical.

2. Grain.

- a. Storage bins,
- b. All conveyances, and
- c. Used mechanized farm equipment, and
- d. Soil-moving equipment contaminated with kernels manifesting the Karnal bunt disease, shall be treated using 1 of the following procedures:
  - i. Sodium hypochlorite. Wet all surfaces to the point of runoff with a solution of chlorine mixed with water applied at the rate of one gallon of commercial chlorine bleach (5.2 percent sodium hypochlorite) mixed with 2.5 gallons water. To minimize corrosion, the equipment or site should be thoroughly washed down after 15 minutes; or

- ii. Steam. Apply to all surfaces to the point of runoff; or
- iii. Hot water and detergent. Apply under high pressure (at least 30 pounds per square inch) at a minimum temperature of 180 degrees F. to all surfaces; or
- iv. Fumigation. Methyl bromide at 15 pounds/1000 cu. feet for 96 hours. For use when the treatments in subsection (E)(1)(b)(i), (ii), and (iii) are not practical.

3. Others.

- a. Used bags, sacks, and containers may be either soaked for 15 minutes in 30% chlorine bleach (5.2 percent sodium hypochlorite), buried in a sanitary land fill, or burned.
- b. Soil and wheat straw, stalks and seed heads for decorative purposes. Methyl bromide at 5 pounds/1000 cu. feet for 96 hours.

F. Cultural restrictions.

- 1. Soil associated with certain commodities (i.e., Nursery stock, turf, etc.) from a field under quarantine, where wheat, Durum wheat or Triticale manifesting the Karnal bunt disease has been grown cannot be moved from that field unless it has been treated or tested and found to be negative by SAL or other approved lab. (Exceptions: dust particles, soil lodged in or on tires and/or wheels or wheel axle, soil attached to equipment as a result of accidental gouging of the ground, soil adhering to equipment, boxes, sacks, bags, etc. as a result of being set on the ground, soil attached to fruits or vegetables growing on top of the ground, and soil attached to fruits or vegetables growing in the ground but which have been processed through a processing plant.)
- 2. Clumps or clods of soil on equipment moving from fields under quarantine to fields outside the quarantine area shall be removed.
- 3. Wheat shall be planted in a positive spore field no often than every 3rd year.

G. Violations.

Volunteer wheat in a field where wheat manifesting the Karnal bunt disease was grown within 1 year of the last known infection or before the field is found to be free of Karnal bunt is a violation of this order.